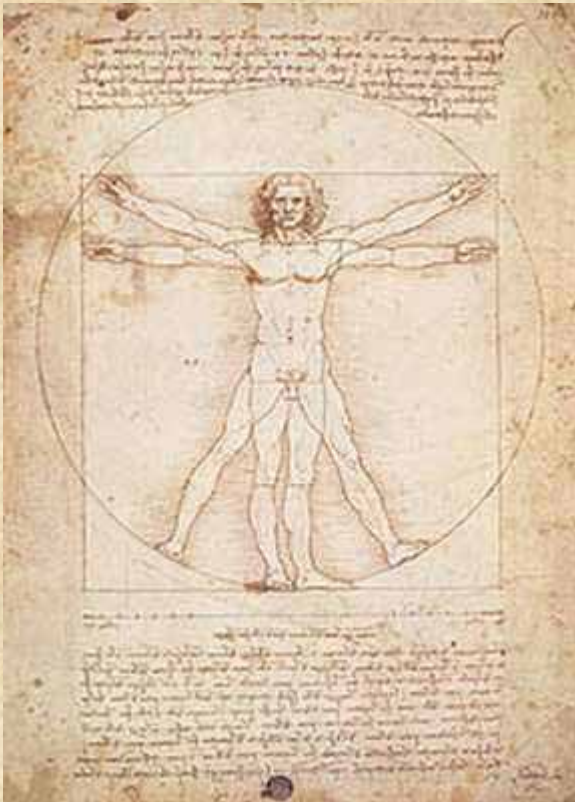


# Progress and Status of the CDF Online Project



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# CDF

- The Collider Detector at Fermilab (CDF) experimental collaboration is committed to study high energy particle collisions at the highest energy particle accelerator. The goal is to discover the identity and properties of the particles that make up the universe and to understand the forces and interactions between those particles.
- 396 ns beam-beam crossing (=2.5 MHz)
- 40,213 TDC channels (nsec resolution)
- 688,124 Silicon channels (L00, SVX2, ISL)
- 1.6 TB/s "detector bandwidth"
- 150 kB/event after compression
- 20 MB/s bandwidth to permanent storage



# CDF Online

- about 160 read out controller CPUs
- about 200 level 3 nodes
- data logger
- database machines
- DAQ and consumer server
- DAQ and consumer desktop/clients
- test and development systems





# History

- middle 2004 PPD/CDF contacted CD/CDF asking to transfer supervision of the CDF Online system administrators.
- in October PPD approached CD with a request for help.
- on November 30<sup>th</sup> PPD, PPD/CDF, PPD/CDF Operations, CD, CD/Run II, and CD/CSS signed an MoU transferring responsibility for the CDF Online.
- applications, DAQ, budget stays in PPD



# Project Definition

- **Scope:**

The requirements, planning, solution design and selection, implementation, upgrade, maintenance, and operation of the CDF online cluster (consisting of the CDF online computers in B0, the database servers, web-servers, sonsumer/run-control/process servers but **excluding level 3, event builder, and data logger systems**). This pertains to the systems themselves and **not to the online application software** that runs on the systems.

- **Time:**

The remaining part of the Tevatron Run starting when the agreement is reached with a **10 week transition period** to allow for hiring of two system administrators in the CD/Run II department.



# Responsibilities

- **PPD:**
  - assessing, documenting the CDF Online needs
  - reviewing design and selected solutions
  - initiating sysadmin position transfer
  - providing funds
- **CD/Run II:**
  - solution design/selection, implementation, upgrade, maintenance, and operation of the CDF Online cluster
  - administration of the online systems
  - follow operation, address day-to-day needs



# Responsibilities

- **CD/CSS:**
  - Solution design/selection, implementation, upgrade, maintenance, and operation of the CDF online database servers
  - database administration as before
  - follow operation, address day-to-day needs
- **CD/Networking:**
  - network infrastructure as before





# Current Status

- all systems are running smoothly !
  - one webserver hang
  - one database dump/reboot
- but don't breathe in the computer room:
  - old hardware
  - critical components without redundancy
  - limited documentation
  - lost expertise
  - tight arrangements with workarounds by users
  - complex non-CD/CDF standard setups
  - incoherent backup strategy with occasional corruption
  - and a lot of "special" setups





# Current Activities

- understanding use of systems, disk areas, etc.
- shut down, decommission, and excess unused hardware
- identifying fragile arrangements, critical components, areas that need upgrades, areas to increase robustness and reduce support effort by streamlining/new solutions
- designing, selecting new solutions
- reviewing and getting agreements to new approach
- procuring new systems for immediate upgrades
- searching/interviewing new system admin candidates
- new LTS 3.0.4 CDF Online Workgroup
- Julie's group is setting up new production db machine



# Immediate Changes, some

(Immediate = when new equipment is available and operation of the CDF experiment permits)

- Replace Old SGI O200 and Linux fileserver with two NetApp boxes (core of the loosely clustered setup)  
(migrate only active users and reorg+consolidate all other space)
- add local scratch space
- replace current gateway systems with servers that can be 24x7 supported  
(make them really redundant, central to the cluster/for the users)
- common backup strategy with local cache
- console access without physical presence in B0
- request/problem tracking, including helpdesk support
- replace serial line server (P2 at 6.1 with 11 chained Cyclades)
- reinstall systems



# Long Term

- Share expertise/resources
- Goal is to minimize system admin effort  
have CDF Online more robust and better supported
- Two new CDF Online system admins will  
merge with Glenn's Run II sys admin  
group
- Include DØ Online?